

Calculus Advice: At the end of last year, I had students write a letter to themselves, describing what they wish they had known before they started the year. Here are some excerpts from their responses. Different students learn differently, and it was clear from reading these that each student had a different experience in the same class, so see if there's any advice that might work for you.

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Always use a pencil. That's a good one to know, a pen is devil in [Mr. Shah's] eyes... Showing work is very important to Mr. Shah especially on tests. He does give partial credit for showing your work, which will allow you to still do ok on the problem. Also, on tests, make sure to simplify the fractions as much as possible... Have a good understanding of ways to simplify problems using algebra. Once you understand concepts it is mostly the algebra that you have to deal with... One final thing, enjoy yourself.

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Do your homework! Even though its 'just math HW,' and you probably had none with Mr. Amighi, with Mr. Shah, it's different. If you do the HW, you will understand the material. It actually helps a lot. Also – if you get all 3s on your HW, it's def. a good boost to your grade.

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First off, you're going to be glad you took calculus. I know, I know, right now you're all 'I hate math, I hate calculus, I hate the college counselors for making me take this...' and there will be points where you'll *really* hate them, but in the end you're going to be happy.

Mr. Shah likes to go the long way, the real building block method. First you learn the *theory*, then you learn the *original* (prehistoric) way, then (then!) you'll learn the quick fun way. And later still you learn that you could have done it on your calculator all along! [Tutor] will want to teach you the quick way immediately and will moan and groan when you protest that Mr-Shah-hasn't-taught-us-that-yet, but don't give in to her wily ways! They won't help you on the tests.

Do your homework, and cramming is alright (you'll be fine) but it's generally not worth the mild panic attacks you get when you're sitting with the test in front of you and tracing over your numbers with intense purpose because you don't know where to go next. Just study.

[T]he multivariable calc kids are no help at all. Actually, pretty much nobody else gets the way Mr. Shah does things. But whatever, cause you're teacher's better anyway.

[...] You're better at math than you think you are.

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I think this particular calculus class was really rewarding for you. After doing really well in middle school math and in Algebra/Geometry, it was hard not succeeding in Algebra Two and Pre-Calculus. I wish that I had kept my work up nightly, since the beginning of the quarter. If you are not on top of your work and fall behind, it becomes really hard to prepare yourself for the next test or quiz. Even if I couldn't solve a homework problem completely, it still helped to think about it and do what I could. Also I had wished that I remembered how to easily solve some basic trigonometry problems. [...] Remembering the logs and limits work that I did in Pre-Calculus would have probably helped me in the first quarter, but when you start doing derivatives it gets simpler.

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While it is understandable that you were preoccupied with the college process, [sports], maintaining good grades and the like, you should not have let it [stress] you as much as you did. At times, during those long nights of homework and studying, it felt as though you were absent from your own body – your hand was simply accustomed to writing out trigonometric functions without completely processing the method, which made studying for subsequent assessments more difficult. I guess what I am suggesting is better time management: I wish you had designated a time during the evening for just calculus, instead of simply completing assignments whenever you got around to it. Sometimes, you did not even do the homework because you could not find the time, which was an especially bad idea [...]. I remember the horrible nights you spent making up some calculus assignments because of poor skills in time management. [...]

Another thing I wish you would have done is been open to help. Throughout your entire high-school career, you have rejected the notion of asking for help because you have always liked being independent. But it is important to realize that asking questions is okay and it does not mean you are incapable. I know that you refused meeting with Mr. Shah or a classmate when you missed class because you thought that you could catch up on your own, but it was a much more painstaking process than it could have been if you had just gone to Mr. Shah. You should have asked more questions, no matter how simple. Aside from clarifying difficult concepts, it is an effective way of staying engaged, especially as a second-semester senior eager to graduate.

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First off... never, ever say that you hate math. Or that it is ugly. Or that it is too hard. Everything has a solution, even when it doesn't seem possible, and once you find that solution you will realize that your ability to be able to solve that really challenging problem is extremely impressive. Let yourself feel good about the fact that you know how to do these things.

Second... don't ever write in pen. Just don't do it. The power to erase is wonderful and it lets you take beautiful notes which are so valuable its not even funny.

On that note... thirdly – take good notes. Pay attention. Even if [Student] is telling you something really interesting about the poem she read the night before or [Student] is making some absurd comment about something totally off topic pay attention and write down what is written on the board. It will help you, I promise. [...]

Fourth... study. Study! Study! Study! Don't ever fool yourself into thinking that you will be fine on the test if you just come in and wing it because it doesn't work. Even if you can't study for very long, at least look over your notes, do some practice problems, and go through the chapter to refresh yourself of the important concepts and formulas in that section.

Fifth... *always* do your homework. Doing your homework in this class is the easiest way to add good grades that will then average into your overall grade. If you earn consistent 3's on your homework because you at least attempt every problem each night, not only will you understand things much better and be able to come into class with legitimate questions, but you will also be helping out your grade tremendously. Doing your homework also makes studying for tests much easier. Mr. Shah likes to take homework questions and switch around the numbers to create questions for the test, so if you do your homework there should be no surprises.

And lastly, always allow yourself to enjoy calculus. Come into the class with an open mind and enjoy the fact that you are being taught by someone who is truly passionate about what he is teaching and that you are learning something powerful that could prove to be very useful.